



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,985	12/21/2004	Xavier Muldermans	L0008/US	3187
30522 7590 09/27/2007 KRATON POLYMERS U.S. LLC WESTHOLLOW TECHNOLOGY CENTER 3333 HIGHWAY 6 SOUTH HOUSTON, TX 77082				
			EXAMINER JOHNSON, CONNIE P	
			ART UNIT 1752	PAPER NUMBER
			NOTIFICATION DATE 09/27/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

kratonip@kraton.com
michael.masse@kraton.com

Office Action Summary	Application No. 10/518,985	Applicant(s) MULDERMANS ET AL.	
	Examiner Connie P. Johnson	Art Unit 1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-14 and 17-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14, 17-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The remarks and amendment filed 7/9/2007 have been entered and fully considered.
2. Claims 11-14 and 17-28 are presented.
3. Claims 11, 19 and 24 are amended.
4. The 112, 2nd paragraph rejection is withdrawn.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-14 and 17-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Victor et al., U.S. Patent No. 6,127,094

Victor teaches a photopolymerizable composition for use in flexographic printing plates (abstract). The composition comprises an elastomer forming monomer in an amount of 25-95 mol% and a photopolymerization initiator at 0.01 to 20 wt %. The composition also has a support that comprises polyethylene terephthalate (col. 12, line 17). The photopolymerizable composition may also produce a resin relief plates for flexographic printing (col. 11, lines 55-60). Victor also teaches optional linear polymers for inclusion in the block copolymer component of the photopolymerizable composition. The composition also comprises up to 50 wt% of a thermoplastic elastomeric block

Art Unit: 1752

polymer having a general formula of A-B-A, wherein A is a non-elastomeric polymer block with a molecular weight of 2,000 to 100,000 and B is an elastomeric polymer block having a molecular weight of 25,000 to 1,000,000 and a glass transition temperature below 10⁰C (col. 3, line 45-col. 4, line 9). Victor also teaches an ethylenically unsaturated monomer in an amount of 5 to 70 wt% in the composition. Suitable ethylenically unsaturated compounds are polyfunctional vinyl monomers such as methacrylic acid, acrylic acid and trimethylolpropane tri(meth)acrylate (col. 4, lines 45-67). The block copolymers may comprise isoprene and butadiene (col. 7, lines 51-65). Although Victor teaches block copolymers in an amount of 10 to 50 wt% in the composition, he does not specifically teach that the block copolymers are present in an 20/80 to 80/20 of isoprene/butadiene. However, it would have been obvious to one of ordinary skill in the art to use the isoprene and butadiene in a copolymer mixture of 20/80 to 80/20 because Victor teaches combining linear polymers, such as isoprene and butadiene to form water-resistant resin compositions after photopolymerization (col. 3, lines 20-38 and col. 8, lines 1-25).

7. Claims 11, 12, 13, 14, 20, 21, 22, 23, 24 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al., U.S. Patent No. 4,369,246 as evidenced by Holden, U.S. Patent No. 3,265,765.

Chen teaches photosensitive elements comprising a layer with a solvent soluble thermoplastic, elastomeric, block copolymer, an ethylenically unsaturated compound and an addition polymerizable initiator (abstract). The block copolymer has the formula

Art Unit: 1752

A-B-A (col. 3, line 57). The block copolymers also have a glass transition temperature of less than 10⁰C and have a molecular weight of 25,000 to 1,000,000 (col. 4, lines 16-17). The block copolymers are present in an amount of at least 30% by weight (col. 2, line 15). Further, the polymerizable initiator is present in an amount of .001 to 10% by weight or more (col. 6, lines 1-4). Suitable amounts of the ethylenically unsaturated compound are at least 1% by weight (col. 2, line 25). The photosensitive composition also comprises a support and a coversheet. In examples XI and XIII, Chen discloses the use of a polyethylene terephthalate support (col. 16, lines 2-6). Chen also teaches an antihalation layer (col. 10, line 5). The photosensitive elements are used in flexographic printing. The photosensitive elements may also comprise block copolymers of polystyrene-polyisoprene-polystyrene (SIS) or polystyrene-polybutadiene-polystyrene (col. 4, lines 37-44). Although Chen teaches the A-B-A formula for block copolymers in the composition, he does not specifically teach that the block copolymers comprise isoprene and butadiene in amounts of 20/80 to 80/20. Segment B of the formula may comprise a monomer mixture as disclosed in column 4, lines 25-34 of Chen. The specific block copolymers for segment B are disclosed in Holden, U.S. Patent No. 3,265,765. In column 4, lines 15-20 and 32-35, Holden teaches that the elastomeric mid section of the polymer block comprises monomer mixtures of isoprene and butadiene. It would have been obvious to one of ordinary skill in the art to use the isoprene and butadiene block copolymers in the composition of Chen to form suitable mid sections of the elastomeric composition as evidenced by Holden.

Response to Arguments

8. Applicant's arguments filed 7/9/2007 have been fully considered but they are not persuasive.

9. Applicant argues that based on unexpected results in the examples of the instant application, it would not be obvious to modify the Victor reference to obtain a ratio of isoprene to butadiene of 20/80 to 80/20 in the midblock.

Applicant has not filed an affidavit or declaration to identify any unexpected results. Victor does teach mixed portions of isoprene and butadiene as optional components of the copolymer block. In addition, Victor teaches a photopolymerizable composition, wherein polymer A is a non-elastomeric polymer block with a molecular weight of 2,000 to 100,000 and B is an elastomeric polymer block having a molecular weight of 25,000 to 1,000,000 and a glass transition temperature below 10⁰C (col. 3, line 45-col. 4, line 9). Applicant claims the same. Therefore it would follow to choose block copolymers in amounts of 20/80 to 80/20 because Victor teaches the advantage of combining linear polymers, such as isoprene and butadiene to form water-resistant resin compositions after photopolymerization. Although Victor teaches the isoprene/butadiene mixture as an option, the mixture is still contemplated by Victor.

10. Applicant argues that unexpected results may serve as a basis to show a claimed invention as nonobvious.

Applicant has not filed an affidavit or declaration to identify any unexpected results. In addition, the examples in the specification are not persuasive. Applicant's specification discloses that the instant invention is concerned with improving processing

Art Unit: 1752

stability, transparency, hardness and solvent resistance. Victor is also concerned with solvent resistance (water) and processing durability (see Victor's abstract). Further, Victor teaches that once photopolymerized, the composition has improved physical properties, such as tensile strength, hardness, resilience and flexibility (col. 3, lines 20-40). Therefore, it would follow that the Victor reference definitely teaches a composition that yields the same advantages as applicant is concerned with.

11. Applicant argues that Chen does not teach a random mixture of midblock polymers. Further, that the recitations cited merely mention isoprene and butadiene but not as specifically employed in a random block polymer.

Chen does teach a photopolymerizable composition comprising a block copolymer with a formula of A-B-A (col. 3, line 57). The block copolymers also have a glass transition temperature of less than 10⁰C and have a molecular weight of 25,000 to 1,000,000 (col. 4, lines 16-17). Although Chen may not specifically teach a block copolymer comprising isoprene and butadiene in amounts of 20/80 to 80/20, Chen contemplates using non-elastomeric and elastomeric block polymers ranging from 99:1 to 1:1 (col. 5, line 33). Holden specifically discloses the block copolymers in the random block copolymer comprise isoprene and butadiene.

12. Applicant argues that Holden does not teach a random block of isoprene and butadiene. Further, that Holden merely discloses the use of nonelastomeric and elastomeric polymers that may comprise isoprene and butadiene.

Holden teaches that the polymer block can be any synthetic elastomer of an aliphatic conjugated diene, such as isoprene and butadiene (col. 4, lines 32-36). A

polymer block is a linear connection of polymers, therefore Holden definitely teaches a mixture of any of the conjugated dienes listed, including isoprene and butadiene.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Connie P. Johnson whose telephone number is 571-272-7758. The examiner can normally be reached on 7:30am-4:00pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1752

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Connie P. Johnson
Examiner
Art Unit 1752

CYNTHIA R. KELLY
SUPERVISORY EXAMINER
ART UNIT 1752

Cynthia R. Kelly